DOCUMENT RESUME

ED 345 628 HE 025 523

AUTHOR Hyllegard, David; Lavin, David E.
TITLE Higher Education and Desirable Work: Open Admissions and Ethnic and Gender Differences in Job Quality.
PUB DATE Apr 92
NOTE 48p.; Paper presented at the Annual Meeting of the American Educational Research Association (San Francisco, CA, April 20-24, 1992).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Access to Education; Affirmative Action; Blacks; *College Admission; Comparative Analysis; *Educational Benefits; *Education Work Relationship; Employment; Followup Studies; Higher Education; Hispanic Americans; Job Placement; Labor Market; *Minority Groups; *Open Enrollment; Outcomes of Education; *Sex Differences; Whites
IDENTIFIERS City University of New York

ABSTRACT

This paper examines the influence of higher educational credentials on the two work qualities of job authority and work complexity, and asks whether education provides white and minority men and women comparable access to jobs involving such work. Findings are based on a follow-up study of 3,525 Blacks, Hispanics, and Whites who attended the City University of New York after initiation of an open-admissions policy in 1970 and were employed full-time in 1984. Among the findings are that open admissions increased access to jobs involving complex work and authority among individuals who would not have gone to college in the absence of the policy. However, the burden of past educational and economic disadvantages with which minorities entered college diminished educational attainments, thereby hurting chances to compete for good jobs. In addition, labor market conditions favoring Whites over minorities with similar education and work experience imposed a further constraint on access to desirable work. Yet, especially for the large number of Blacks and Hispanics who earned bachelor's and postgraduate degrees, the quality of work life is well ahead of where it would have been without the opportunity created by the policy. A gender-linked pattern of college majors and subsequent occupational attainments that limited women's chances for the best rewarded positions was also found. Results indicate that open admissions add to opportunity in the labor market, but effects are limited by wider institutional conditions. Contains 75 references. (GLR)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED345628

Higher Education and Desirable Work:

Open Admissions and Ethnic and Gender Differences in Job Quality

David Hyllegard and David E. Lavin

City University of New York

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

David Hyllegard

David E. Lavin

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

HE025523

Paper presented to annual meetings of American Educational Research Association, San Francisco, 1992

BEST COPY AVAILABLE

Abstract

HIGHER EDUCATION AND DESIRABLE WORK:
OPEN ADMISSIONS AND ETHNIC AND GENDER DIFFERENCES IN JOB QUALITY

David Hyllegard and David E. Lavin

While there has been much research on the effect of educational attainment on occupational status and earnings, relatively little is known about its impact on other dimensions of work, such as job authority and work complexity. This paper examines the influence of higher educational credentials on these two work qualities, and asks whether education provides white and minority men and women comparable access to jobs involving such work. To do so it uses longitudinal data on blacks, Hispanics, and whites who attended the City University of New York after it initiated its landmark open-admissions policy in 1970. That policy created educational opportunity for disadvantaged minority students who otherwise would have had no chance to attend college. Its ultimate aim was to enhance chances for desirable jobs and thereby narrow inequalities separating blacks and Hispanics from whites.

Analyses reveal that open admissions increased access to jobs involving complex work and authority among individuals who would not have gone to college in the absence of the policy. Nonetheless, the burden of past educational and economic disadvantages with which minorities entered college diminished educational attainments which, in turn, hurt chances to compete for good jobs. Moreover, labor market conditions favoring whites over minorities with similar education and work experience imposed an additional constraint on access to desirable work. Yet, especially for the large number of blacks and Hispanics who earned bachelor's and postgraduate degrees, the quality of work life is well ahead of where it would have been without the opportunity created by the policy. Gender disparities in work complexity and authority favoring males stem from the relationship between sex-typed college majors and employment in sex-segregated occupations, and from the way these occupations are distributed over the public and private employment sectors. Policies such as open admissions add to opportunity in the labor market, but effects are limited by wider institutional conditions.

The heightened concern with equality of social and economic opportunity since mid-century has made the study of education and social stratification an area of considerable interest to social scientists and policy experts. This issue typically has been addressed by examining the effects of educational attainment on occupational status and earnings (e.g., Blau and Duncan, 1967; Sewell and Hauser, 1975; Featherman and Hauser, 1978; Jencks et al., 1979). Largely overlooked by this tradition of research is the influence of educational attainment on the qualities or attributes of work itself (Hall, 1983).

There is reason to believe that intrinsically rewarding work is a highly valued outcome of education. Although students may initially enroll in college mainly to better their odds for higher earnings and a prestigious job (e.g., Carnoy and Levin, 1985), the college experience broadens students' orientation towards work and its range of potential rewards. Studies of the impact of college on students indicate that seniors place less emphasis than freshmen on extrinsic work rewards (e.g., income, job security, status), and more emphasis on intrinsic qualities such as opportunities for self-expression, use of special talents, and independence (Bowen, 1977:109; Feldman and Newcomb, 1973:17-19; Strumpel, 1971).

Additional evidence for the importance of nonmonetary qualities of work in the evaluation of work experience is provided in a recent study by Jencks et al. (1988). On the basis of a national survey of working men and women, the authors found that nonmonetary attributes of work outweighed earnings in determining job desirability.

This paper examines how education affects access to nonmonetary yet rewarding job qualities among white and minority men and women. It draws on data from what arguably has been the nation's most ambitious higher educational opportunity program: the open-admissions policy initiated in 1970 at the 17-campus City University of New York (CUNY), the nation's third-largest higher educational

system and its largest urban university. That policy guaranteed a place in the university to all graduates of New York City high schools. It was designed to increase educational opportunity for economically and educationally disadvantaged minority students, principally blacks and Hispanics, who otherwise would have had no chance for college. The ultimate objective of the policy was to provide a pathway to desirable jobs, thereby narrowing socioeconomic disparities separating these minorities from whites.

Although open-access policies have a long tradition in American higher education, the program initiated at CUNY contained elements not seen in other systems. It was designed not simply to broaden access to college, but more precisely, to create wider opportunity for baccalaureate completion. Its admissions policy offered students a place in a four-year college if they earned an 80 average in their academic college preparatory courses or ranked in the top 50 percent of their high school graduating class. The percentile criterion assured that the top half of the class in ghetto high schools, were grades tended to be lower, could get into a four-year school. Consequently there was far less racial and ethnic sorting between the university's four- and two-year colleges than is found in other open-access systems, most notably California's. There was a close articulation between the senior and community-college tiers of the CUNY system: graduates of the two-year schools were guaranteed admission to a four-year school with full credit. To improve chances for academic success among the large number of students with weak academic preparations, the university implemented large-scale programs of compensatory education, supportive counseling, and other related services. Also contributing to educational opportunity was the institution's long-standing policy of free tuition. (For a more detailed description of the program, see Lavin et al., 1981.)

Though the CUNY program involved only a single university system, its outcomes have more general implications. The university is located in a city

that contains large concentrations of lower-class blacks and Hispanics, two of the most disadvantaged minority groups in the nation and typically the main focus of opportunity programs in higher education. Because the open-admissions policy aimed to create more educational opportunity than other open-access models, it may be regarded empirically as a limiting case from among a range of possible opportunity programs. As a limiting case, its results provide an indication of the outcomes possible under the most favorable conditions.

While the educational outcomes of open admissions have been described (Lavin et al., 1979, 1981; Alba and Lavin, 1981; Lavin and Crook, 1990) and an early analysis of the effect of educational attainment on earnings has been reported (Lavin et al., 1989), we have not known if the policy enhanced opportunity for intrinsically rewarding work experience. To examine this issue we assess whether the education that was largely made possible by the policy enhanced minorities' quality of work life and improved their position vis-a-vis their white peers. Although the policy had no specific gender focus, sex differences in labor market outcomes are well known, and so we shall also explore the issue of gender differences in our analysis.

We address these concerns by examining the distribution and determinants of job authority and work complexity among college-educated black, Hispanic, and white men and women. Evidence indicates that those highly placed in the hierarchy of authority generally have less routinized tasks, more status, greater decision making responsibility and higher earnings (Kohn and Schooler, 1983:212; Kluegel, 1978; Wolf and Fligstein, 1979a, 1979b). Assessing the extent to which minorities and women have access to positions of authority sheds light on their attainment of influential organizational roles. Whereas job authority implies managerial responsibility in a hierarchically structured workplace, work complexity pertains to the cognitive demands associated with different work activities. Specifically, work complexity refers to the degree to which task situa-

tions require thought and independent judgment (Kohn and Schooler, 1983:106). As the extensive research of Kohn and his associates has demonstrated, it is a central property of work that differentiates challenging jobs from more routine, less demanding ones (also see Spenner, 1983). In this study work complexity is judged by tasks involving interaction with data and/or people (e.g., Kohn and Schooler, 1983:22). Work of this type has become one of the hallmarks of the modern postindustrial economy, in which information processing and service rendering play such a central role (e.g., Bell, 1973; Featherman and Hauser, 1978). From the professions and management to clerical and sales jobs, communicative, interpersonal, and numerical skills are the primary competencies required in the performance of work.

A PERSPECTIVE ON THE ATTAINMENT OF HIGH-QUALITY JOBS

Although relatively little is known about the distribution among ethnic and gender groups of intrinsic work qualities, inequities in favor of whites and males are well documented for earnings, access to promotion ladders, and occupational attainments (e.g., DiPrete and Soule, 1986; England and McCreary, 1987; Farley, 1984; Jencks et al., 1979; Rosenfeld, 1980; Spilerman, 1977). These inequities raise the possibility that minorities and women fare worse than whites and men in obtaining jobs with complex work and authority.

We view the attainment of such jobs as primarily influenced by educational credentials. Because postgraduate credentials (M.A., Ph.D., LL.B., etc.) are a prerequisite for employment in most professional occupations and for an increasing share of high-level managerial and administrative positions (e.g., Useem and Karabel, 1986), they undoubtedly have an important influence on obtaining jobs with challenging task demands and/or decision making responsibility. A bachelor's degree is frequently required for employment in many technical, middle-level managerial, and a number of professional occupations (nursing, teaching,

social work, etc.). Whether an associate degree leads to intrinsically demanding work is less certain. The labor market value of a two-year college credential has been the subject of vigorous debate (see Dougherty, 1987, for review). Supporters of community colleges contend that an A.A. degree provides important leverage in the competition for good jobs, particularly for academically weak students. Alternatively, critics argue that A.A. recipients are primarily channeled into jobs with limited career prospects. Since the educational attainments of black and Hispanic college students are typically lower than those of their white counterparts (Lavin and Crook, 1990), their chances of obtaining high-level work are diminished. Differences in credential attainments therefore should explain a substantial portion of ethnic disparities in job complexity and authority.

Employment experience has a bearing on access to high-level jobs. According to human capital theory, work experience represents an investment in work skills that enables one to perform more demanding tasks (e.g., Mincer, 1974, 1989). While undoubtedly true in general, there is reason to believe that time spent at work is not uniformly valuable. A year of employment after graduating from high school, while perhaps having a salutary effect on attitudinal traits, is not as potent in enhancing skills as a year after finishing college (e.g., Griffin, 1978). Post-degree work experience is a direct investment in one's career field. To examine the influence of work experience, we distinguish between the number of years employed before and after completing one's education, expecting that the latter has a greater impact on job quality.

It is also likely that labor-union membership is negatively associated with job authority.[1] As numerous commentators have observed, unions have conceded to management the right to run the enterprise in exchange for higher wages, fringe benefits and job protections for their members (e.g., Aronowitz, 1973; Freeman and Medoff, 1984; Jacoby; 1985; Piore, 1974). And while unions do negotiate

work-rules to protect workers from abuses, higher-level supervisory functions (hiring and firing, access to confidential information, etc.) remain the prerogative of management and are the main criterion for excluding an employee from a collective bargaining unit. Hence it is probable that union membership diminishes work authority. Empirical evidence for this is the substantial negative correlation between unionization and authority reported by Kluegel (1978).

Another variable that deserves attention is labor market sector, specifically public- versus private-sector employment. Research shows that the emergence of a service-based economy has increased demand for a better educated, more highly skilled work force (Hunter, 1988; Kasarda, 1983; Lichter, 1988), and that in the nation's major urban centers the upgrading of occupations appears especially pronounced in the private sector. In New York City, for example, the dramatic expansion of private-sector business services (financial, legal, insurance, etc.) fueled the sharp growth in managerial, technical, and professional employment (U.S. Dept. of Labor, 1988; Waldinger, 1986-1987). Therefore it seems likely that opportunities to obtain challenging work and authority may be greater in private than public employment. An additional reason for expecting the private sector to have higher average work complexity is that private organizations typically introduce advanced production technologies more rapidly, because they are subject to greater competitive pressure to lower costs. On balance, these technologies (e.g., various computer-aided labor processes) appear to increase the cognitive demands of work (Adler, 1986; Hirschhorn, 1984; Zuboff, 1988).

Although work complexity and job authority may, on average, be higher in the private sector of the economy, minorities and women may have greater success in gaining access to jobs involving such work in the public sector, partly because public employers have more aggressively sought to reduce employment-related discrimination (Farley, 1984; Kaufman and Daymont, 1981; Kaufman, 1986).

Consequently, the public sector has become very important to the chances of minorities and women for professional, technical, and administrative employment (Carnoy and Levin, 1985; Collins, 1983; DiPrete, 1987; Farley, 1984; Hout, 1984; Sokoloff, 1980; Wilson, 1980). We will explore the process of obtaining complex work and job authority in each employment sector.

In summary, this study assesses the extent to which educational attainment enhances chances for intrinsically engaging work among ethnic and gender groups who began college at CUNY after its open-admissions program was initiated in 1970. Along with educational credentials, we examine other factors that may contribute to group differences in such jobs: work experience before and after degree completion, private- versus public-sector employment, and (for job authority) nonunion verses union membership.[2]

DATA AND METHODS

When CUNY's 17 senior and community colleges began the open-admissions policy in the fall of 1970, a longitudinal research effort was initiated to evaluate its results. Large samples of the 1970, 1971, and 1972 freshman classes were surveyed by questionnaire, generally either at registration or in required freshman courses. The response rate for each class was as follows: 1970, 43 percent of 31,596 entrants; 1971, 24 percent of 35,639 entrants; 1972, 36 percent of 35,545 entrants. The survey data include information on race and ethnic group membership, gender, age, family income on entry to CUNY, parental educational attainments, and educational aspirations. These survey data were integrated with students' official academic records, which include information on high school background, college and curricular placement, and collegiate academic performance through the spring semester of 1975. These samples have been shown to provide good representations of the populations and have been the basis for a number of studies that describe and analyze various outcomes of the

open-admissions policy (Lavin et al., 1979, 1981; Alba and Lavin, 1981).

To ascertain students' further educational attainments (at CUNY and elsewhere), labor market experiences, and other outcomes, we conducted a follow-up survey in 1984 of the 34,507 respondents who were members of the original 1970-1972 cohort samples. This survey yielded approximately 5,000 respondents. The follow-up data were merged with the original files, and the three freshman cohorts were combined to form a single subsample. The resulting integrated data set forms the point of departure for the analyses that follow. Comparison of the subsample with the aggregated original sample showed that they differ in certain respects. Most notably, CUNY graduation rates as of 1975 are higher in the follow-up sample, implying that subsequent educational attainments (and most likely occupational attainments) would exceed those in the mother sample. To adjust the subsample for nonresponse bias, we developed a weighting procedure based on a strategy suggested by Berk (1983). This involved using logistic regression to predict the likelihood that a given individual would have responded to the survey, based on what we know about the characteristics of those who did respond, including race, age, gender, income, high school average, entry cohort, level of entry to CUNY (senior or community college), number of credits earned at CUNY, and graduation from CUNY. This procedure produced adjusted values for variables in the subsample that closely matched those in the original sample.

The study includes only respondents who reported that they were employed full-time in 1984. Virtually all male workers and over 80% of females in the labor force were so employed--a total of 3,525 respondents.[3]

Variables

Work Complexity. As we said earlier, work complexity refers to the degree of thought and independent judgment required by work with data and/or people.

To operationalize this variable, scores of work complexity in relation to both data and people were assigned to each of the 261 census occupational titles in the CUNY data. These scores were obtained from the 4th edition of Dictionary of Occupational Titles (DOT) (U.S. Dept. of Labor, 1977). Described in detail elsewhere (Cain and Treiman, 1981; Miller et al., 1980), the DOT is based upon ratings produced by trained occupational analysts who conducted extensive on-site observations of the task requirements of occupations, including their complexity of involvement with data and people. Work with data is scored on a seven-point scale ranging from no relationship to data or simply comparing readily observable characteristics to synthesizing information in order to develop concepts or interpretations. Work with people is scored on a nine-point scale, ranging from the simple taking of instructions to mentoring (i.e., counseling an individual with regard to problems that may be resolved by legal, clinical, or other professional principles). We created a single measure of work complexity by factor-analyzing the data and people information, using the factor scores to produce an overall work complexity index. The result is a variable with a mean of 0, a standard deviation of 1, and a range of 5.36, with a high work complexity value of 2.47 and a low value of -2.89.

Occupations in the top one-third of the variable distribution include architects, dentists, engineers, high-level administrators and managers, lawyers, physicians, and teachers. The prominence of professional and high-level managerial occupations in the upper range of work complexity is consistent with other research. Spaeth (1979, 1984), for instance, characterizes professional and upper-echelon managerial work as highly complex because it entails self-direction and abstract conceptualizing. Such work often involves the exercise of independent judgement, analytical ability, and the application of a substantial body of theoretical knowledge to solve problems, make decisions, and so forth. By contrast, the middle third of the variable distribution is typified

by technical and mid-level managerial occupations (e.g., air traffic controllers, assistant managers, police officers, and sales managers) that generally have a narrower range of task responsibilities and/or more specific cognitive demands. The more routinized jobs (e.g., bank tellers, bus and truck drivers, cashiers, clerical workers, and security guards) appear in the bottom third of the complexity distribution.

Job Authority. The uppermost level of work authority is where decisions are made that affect the overall scope and direction of an organization. For example, high-level managers make the important decisions concerning firms' investment strategies. In assessing the job authority of former CUNY students who were typically in their early- to mid-thirties when we administered the follow-up survey, it seems unrealistic to focus on access to the highest reaches of management. On the other hand it is quite conceivable that some may have obtained access to the ranks of middle management. This is where responsibilities for the day-to-day functioning of the organization lie, particularly supervising employees. Supervisory authority may entail a range of responsibilities, including organizing and monitoring others' work, conducting job performance evaluations, making decisions about pay and promotions, and hiring and firing employees.

In order to assess the distribution of authority among the former CUNY students, the follow-up survey asked respondents if they supervise the work of others, have authority to hire and fire employees, and whether their work is not closely supervised.[4] A job authority scale ranging from a low of 0 to a high of 3 was created by adding the number of positive responses to these questions.[5] Thus the highest authority score is 3, meaning that the respondent has authority to hire and fire, supervises others' work, and his or her own work is not closely supervised. The next level contains those with positive responses to any two questions (score=2); the third level includes those with a positive

response to any one question (score=1); the final category consist of those with no positive answers to the three questions (score=0).[6]

Ethnicity. Race/ethnicity is represented as a set of dummy variables for blacks, Hispanics, and whites. Whites and blacks are non-Hispanic; Hispanics are those who identify themselves as of Latin origin. Approximately 90 percent of Hispanics were of Puerto Rican origin.

Female. Gender is represented as a dummy variable (female=1).

Educational attainment. Educational attainment is measured as the respondent's highest credential earned (at CUNY or other institutions) as of 1984. The credentials are as follows: high school diploma (for CUNY entrants who earned less than 15 credits and never received a college degree); some college (for those who earned 15 or more credits but never received a college degree)[7]; associate degree; bachelor's degree; master's degree; advanced or professional degree. Each level is represented as a dummy variable (degree earned=1).

Work experience prior to highest degree attainment. This indicates the number of years employed prior to earning highest degree.

Work experience after highest degree attainment. This indicates the number of years employed since receiving highest degree.

Public sector. Public- versus private-sector employment is represented as a dummy variable (public=1).

Union. A dummy variable of union membership versus nonmembership (union member=1).

Our analyses are designed to assess the association of educational attainment with work complexity and job authority. For each of the outcome variables (work complexity followed by job authority), the analysis proceeds in three steps. First, we provide a tabular presentation.[8] Next, multiple regression analysis is used to disclose the relative importance of education and other variables in explaining ethnic disparities in job quality. Lastly, separate

regression equations for public and private sector employees are estimated so that sector differences in the attainment of high-level jobs can be assessed.

RESULTS

The Attainment of Job Complexity

Table 1 presents the proportion of each ethnic and gender group holding jobs in the top one-third of the work-complexity distribution. Overall, what stands out are the large differences between whites and minorities, and the absence of gender differences. Whites are nearly twice as likely to hold the most challenging jobs.

The relation between educational attainment and work complexity exhibits a threshold effect: relative to the high school diploma, neither some college nor an associate degree augment complexity. The B.A. appears to be the minimum credential necessary for entry to jobs that provide more challenging work, and seems especially important for minority chances of holding a challenging job. For instance, relative to an A.A., the B.A. is associated with roughly a sixfold increase in the proportion of Hispanic men and women doing complex work and close to a fivefold increase for black women. Among holders of graduate degrees there are further substantial increments in the proportion with the most complex jobs. For example, holders of an M.A. are generally about twice as likely to be doing complex work as those with a B.A.

Credential level influences the relation between ethnicity and job complexity. Ethnic disparities favoring whites are evident among those with high school diplomas, but these inequalities evaporate among holders of bachelor's and master's degrees (and are even reversed in the case of Hispanic women at the B.A. level). With educational attainment controlled, gender differences favoring males are significant among whites at the A.A., B.A., and advanced or professional degree levels. There are no gender differences among blacks and

Hispanics. In the main, work complexity appears to be more strongly related to education and ethnicity than to gender.

As we noted earlier, entry to positions with complex work may be influenced by pre- and post-degree work experience. Further, it is quite possible that substantively complex jobs are more typical of the private than of the public sector. To clarify the role of these factors, we regressed work complexity on ethnicity, gender, educational attainment, years employed before highest degree, years employed after highest degree, and public-sector employment.[9] The results are shown in Table 2. Two models are presented: the first reproduces the unadjusted ethnic differences in work complexity (that can be calculated from Table 3); the second reports ethnic differences controlling for the effects of the other independent variables.

The analysis confirms that educational attainment is by far the most powerful influence on work complexity. As expected, the highest credentials are associated with the most complex work. Compared with the reference category, high school diploma, an advanced or professional degree is associated with an increase in job complexity of 2.04 (approximately two standard deviations). The increment accorded to a master's degree is nearly as large. To a lesser extent, bachelor's degree recipients also obtain more complex work than those whose highest degree is a high school diploma. Consistent with the finding in Table 1, earning an associate degree seems to do relatively little to augment job complexity. This result is in line with the critical perspective on community colleges, which holds that an A.A. essentially prepares students for low-level jobs with dim prospects for rewarding work experience (e.g., Dougherty, 1987; Karabel, 1972; Monk-Turner, 1990; Pincus, 1980, 1986). In short, a B.A. and especially a postgraduate credential dramatically improve chances of obtaining challenging work.

Labor market sector also makes a difference. Relative to the public sector,

private employment is associated with more complex work. Also having an influence is post-degree work experience. The longer the time working with a degree, the greater the likelihood of attaining a position with challenging work.

Work experience prior to degree completion is not related to job complexity. The results also indicate that women are as likely to obtain complex positions as comparable men. This is true of women in general and within each ethnic group (i.e., tests revealed no sex and ethnic group interaction effects).

This analysis adds to our understanding of ethnic inequalities in access to challenging work. The most important source of these disparities is educational attainment. As can be seen from the group distributions on the explanatory variables in Table 3, blacks and Hispanics were more likely than whites to leave college without a degree or with an associate degree. By contrast, whites hold a greater percentage of bachelor's, master's, and advanced or professional degrees and as a result are more apt to gain access to positions with complex work. But also contributing to blacks' and Hispanics' typically lower job complexity is their disproportionate employment in the public sector, where work tends to be less challenging. Better than one in three blacks and nearly as many Hispanics are public-sector employees, as compared with one in four whites. Minorities' disadvantaged status on these variables is to some extent offset by their greater post-degree work experience, but it must be recognized that lengthier work experience results from their lower educational attainments. That is, leaving college without a degree or with an A.A. allows one more time to work with a degree (diploma) in hand than someone who earns a B.A. or higher credential. So while minority individuals were in the workforce, whites more often remained in school pursuing higher degrees that provided much greater leverage in attaining jobs with challenging work.

All told, these variables add considerably to understanding the sources of ethnic differences in work complexity. Even with these controls, however,

differences favoring whites remain.

Because the public sector is so important for minority employment, the public/private dimension needs more exploration. As we mentioned earlier, research indicates that public employers have more actively sought to reduce employment-related discrimination (e.g., Farley, 1984; Kaufman and Daymont, 1981; Kaufman, 1986). This suggests that the process of attaining complex jobs may be more equitable in the public sector. To examine this issue, we carried out separate regression analyses for public- and private-sector employees.[10]

The results (Table 4) show clear contrasts in the process by which individuals gain access to complex work. In the public sector, initial ethnic differences (model 1) disappear in the full model (2), and educational attainment exerts considerable influence on obtaining jobs with challenging work. Although educational attainment is the most influential determinant in the private sector, its role is smaller. Ethnicity continues (model 2) to be a factor affecting work complexity: whites are advantaged relative to minorities with comparable education and work experience.

That ethnic inequalities persist in the private sector when differences in educational attainment and other characteristics are controlled suggests that this sector is less meritocratic than the public. This implies that in part these inequities may be due to discriminatory processes (cf. Kaufman and Daymont, 1981; Waldinger, 1986-1987:390). Possibly there were employer preferences to hire and/or promote whites into higher-level jobs. Though we lack the data to know whether this happened, we did ask respondents whether they believed they had ever been victims of discrimination in promotions or hirings. In both sectors blacks and Hispanics were more likely than whites to report discrimination. However these differences were much larger among private-sector employees. For example, among respondents in the public sector, blacks were 19 percent more likely than whites to indicate discrimination in promotions,

whereas among those in the private sector they were 37 percent more likely. The comparable figures for Hispanics were 8 percent versus 19 percent. The sector pattern of ethnic differences for discrimination in hiring was similar. These results lend support to the analyses shown in Table 4 indicating that access to jobs with challenging work is more equitable in the public than the private sector.

Table 4 also reveals an important gender contrast in work complexity: relative to comparable males, females have more complex work in the public sector; in the private sector they have less. We believe the source of this difference is to be found in sex differences in college major and occupational attainments. The relation between gender-typed college majors and subsequent occupational attainments has frequently been identified as contributing to the sex segregation of occupations (e.g., Angle and Wissmann, 1981; Daymont and Andrisani, 1984; England and McCreary, 1987; Jacobs, 1989; Marini and Brinton, 1984; Mickelson, 1989). In part because of sex differences in socialization and experiences in schools (e.g., curricular placement and counseling practices that steer females away from math and science courses), females often aspire to, and are overrepresented in the so-called helping professions--teaching, social work, nursing, etc.--which are mainly located in the public sector.

To explore whether college major may be related to gender differences in occupations in the public and private sectors, Table 5 displays degree recipients' major field of study by sex and ethnicity. It shows clear gender contrasts and, with the exception of minorities' greater likelihood of majoring in health and social services, little or no ethnic differences. Males are overrepresented in business and natural sciences/engineering/math. Taken together, approximately four men in ten majored in these fields, whereas less than two women in ten did. By contrast, females hold a disproportionate share of degrees in education or in health and social services. These fields represent about 44

percent of their degree majors but only 16 percent of males'. In the remaining fields sex differences are relatively small, with only the social sciences exhibiting more than a five percent differential.

Largely consistent with national data (U.S. Bureau of the Census, 1987, Table 3) and the studies cited above, these results suggest that the fields pursued by women channel them into public employment in social-service professions. By the same token, the fields pursued by men, especially business and engineering, would seem to be linked to upper-level private-sector employment. Inspection of the occupations held by women and men in the two job sectors supports this hypothesis. Fully 30 percent of publicly employed women are schoolteachers, whose work is particularly complex in relation to people. Another 13 percent hold other public-sector professional positions (as librarians, social workers, and the like) that typically involve complex work. In this sector, males are found in less complex semiprofessional and technical occupations, for instance as police officers, correction officers and firemen. In the private sector, on the other hand, males are nearly three times as likely as females to occupy the most complex, higher-level managerial positions (21 percent to 8 percent). They also hold an edge in professional employment, while most clerical jobs are held by women.

In effect, gender differences in attaining complex jobs derive from the way sex-segregated occupations are distributed over public and private sectors. Females obtain challenging work in the public sector because the professional positions traditionally occupied by women are in education and other services provided by the state. Therefore it is not that women are somehow unfairly advantaged in public employment, but rather, this is where upper-level positions consistent with their sex-typed occupational preferences are concentrated. Even though they have made gains in occupations traditionally dominated by men (e.g., England and McCreary, 1987; Jacobs, 1989), the pattern of employment seen in the

BEST COPY AVAILABLE

CUNY data is very common. Indeed, national and New York State census data indicate that females are disproportionately employed in public sector professional occupations whereas males are overrepresented in managerial employment in the private sector (U.S. Bureau of the Census, 1984, Table 279; 1983, Table 220).

In sum, our analyses show that access to complex jobs is strongly associated with postgraduate degrees and, to a lesser extent, bachelor's degrees. Since blacks and Hispanics lag behind whites in the attainment of these credentials, they are less likely to be doing challenging work. But lower educational attainment is not the only source of minority group disadvantage. Even when differences in education and other characteristics are taken into account, whites still fare better in the private sector of the economy (where most jobs are located and where work tends to be more complex). While meritocratic standards appear largely to determine how complex jobs are allocated in the public sector, the advantage accorded whites in private employment seems at least partially to result from discrimination. Although there is no overall gender difference in work complexity, women tend to fare better in the public sector, where they hold a disproportionate share of professional positions; males are advantaged in the private sector, where they are more likely to be in higher management. This pattern stems, we think, from the relation between gender-linked college majors and employment in sex-segregated occupations, and from the way these occupations are distributed over the public and private employment sectors.

The Attainment of Job Authority

Table 6 presents the proportion of those with high work authority as represented by a job authority scale value of 2 or 3. The most visible finding concerns ethnicity. Without exception whites are more likely to hold jobs high

in authority: on average about half of white men and women occupy such positions whereas in no category of minorities does the proportion exceed one-third. Even when one controls for education, differences in job authority remain. In some cases they are reduced in magnitude but disparities typically persist.

Other aspects of authority are less consistent. For example, although there are no overall gender differences, in some comparisons males have more authority, in others females do. Similarly, there is not a continuous relation between education and this dimension of work. While credentials appear on balance to improve opportunity for job authority, in various instances those with less education are more apt to wield authority than those with higher credentials.

In order to clarify education's role, and to gain a better idea of the sources of ethnic disparities, other variables that affect how these jobs are obtained need to be controlled. This is done in Table 7 which presents the results of a regression analysis. Two models are shown: the first reports the unadjusted ethnic differences in authority; the second reports ethnic differences controlling for gender, educational attainment, years employed before highest degree, years employed after highest degree, public-sector employment, and union membership. (Tests for gender interaction effects were not significant and therefore separate equations for males and females are not warranted.)

This analysis does clarify the somewhat inconsistent findings reported in Table 6. It indicates that education is important, but so are the other variables. With these variables controlled educational attainment exhibits a linear relationship to job authority (although the slight M.A. advantage relative to the B.A. is not statistically significant). Compared with the reference category, high school diploma, an advanced or professional degree produces the largest increase in authority. Holders of M.A.'s and B.A.'s obtain about half the boost of the most educated employees, but considerably more than lesser

educated ones. And an A.A. provides a small edge over a high school diploma. The increment to some college vis-a-vis a high school graduate is not significant.

Each year of work experience before and after completion of schooling increases the likelihood of acquiring job authority, with post-degree experience the more valuable of the two. As anticipated, employment sector makes an important difference: workers in the public sector, who are equal in all the other ways controlled by the analysis, have less authority than their private sector counterparts. Similarly, union members are far less apt than nonmembers to exercise supervisory responsibility.

Males have slightly more authority than comparable females. Because the means on the independent variables are similar for men and women, we suspect that this advantage, like that for complex work, is rooted in gender differences in degree majors and occupational attainments--namely, that men more often earn business degrees and gain employment in management whereas women are overrepresented in education and social service curricula which place them in non-supervisory jobs.

Like the results without controls for education in Table 6, model 1 reveals substantial ethnic differences in job authority in favor of whites. Model 2 goes far in explaining these inequalities. Partly they are attributable to minorities' greater likelihood of union membership which strongly diminishes work authority (51 percent of blacks, 40 percent of Hispanics, but only 29 percent of whites are unionized workers). Of course, blacks' and Hispanics' lower educational achievements also limit their access to managerial positions. The overrepresentation of minorities in the public sector comprises another key source of ethnic difference in acquiring authority.

On the other hand, because blacks and Hispanics have more work experience before and after completion of schooling than whites these variables partly

offset the negative effects of the other factors. However their approximate half year advantage in work experience prior to finishing school and the nearly one year advantage in post-degree work experience hardly compensates for lower degree attainments. For example, comparisons of the unstandardized coefficients indicate that it would take nearly eight years of post-degree work experience for a worker with a high school diploma to match the authority level of his or her peer with a bachelor's degree, all else equal. So although work experience does help one advance in the authority hierarchy, the benefit going to minorities from additional time in the labor force is small relative to persisting in college and acquiring a B.A. or higher credential.

All in all, these variables add considerably to understanding the sources of ethnic differences in job authority. Nevertheless inequities favoring whites persist even after they are taken into account.

Based on the previous analysis of public and private sector differences in the attainment of complex work, it is possible that the process of acquiring authority also differs by sector. Apart from the striking findings for work complexity, the evidence that job authority on average is lower in the public sector and that minorities are far more likely than whites to work there suggest that the public/private dimension needs further examination. To explore this issue separate equations for public- and private-sector workers are presented in Table 8.

In the public sector, initial ethnic differences evaporate with controls. What determines whether an employee has authority--regardless of ethnicity, gender, education, and work experience--is union membership, which dramatically limits access to such work. This finding implies that minorities and women are not unfairly excluded from this sector's authority ranks.

But why does unionization have such an overwhelming influence while educational attainment has no effect, especially since research shows that higher

education is generally required for administrative employment (e.g., Collins, 1979; Useem and Karabel, 1986; Zuboff, 1988)? The union variable is so important because it pinpoints differences in managerial employment: one in four nonunion employees versus less than one in ten of their unionized counterparts falls into the broad census occupational category "managers and administrators." But on the other hand, the unionized segment of the public sector does contain a large share of highly educated professional and semiprofessional employees who generally do not supervise other workers (e.g., social workers, teachers, health care professionals, etc.). Consequently credentials appear to be unrelated to authority because there is little variance in the educational attainments of supervisory and non-supervisory employees. In other words, the expected effect of education is masked by the offsetting influence of non-supervisory workers with comparable schooling.

Unlike the public sector, ethnic differences favoring whites are evident in the private sector despite the strong role played by educational attainment and the other variables. Though we cannot know for certain, this suggests that private-sector employers use race/ethnicity to distinguish otherwise comparably qualified candidates for high-level work, thereby imposing an additional obstacle in minorities' pathway to socioeconomic success and reinforcing long standing patterns of ethnic inequality.

For largely the same reason that we saw for work complexity, gender disparities favoring men in the private sector standout. An important difference revealed by this analysis is that women do not hold positions with higher average authority than men in the public sector, even though they tend to have more complex jobs. Undoubtedly this is because many of these women are employed in professional fields such as counseling, nursing and teaching, where administrative authority is often low (cf., Grimm and Stern, 1974; Strober, 1984). The upshot is that gender-linked occupational preferences produce substantial sex

inequality: whereas professional and managerial routes of occupational mobility are available to men, certain professions have traditionally been and apparently still are the primary avenue open to women.

On the whole these analyses indicate that college credentials--especially a B.A. or higher degree--enhance opportunity for job authority. Indeed, students who only earned an associate degree met with little success in the competition for intrinsically engaging work. And while minorities are well ahead of where they otherwise would have been, it is partly because of ethnic differences in education that they obtained jobs with lower average authority than whites. Also contributing to blacks' and Hispanics' poorer authority chances is their overrepresentation in unionized jobs, their higher rate of public-sector employment and the more favorable treatment accorded similarly qualified whites in the private sector. The relationship between gender and work qualities appears to depend on the persistence of sex-typed occupational aspirations and employment in sex-segregated occupations.

DISCUSSION AND CONCLUSION

Educational opportunity programs have been an important component of policy efforts to reduce socioeconomic inequalities. As one of the nation's leading initiatives, CUNY's open-admissions program has substantially contributed to the educational attainments of minorities who, in the absence of the policy, had little or no chance to attend college (Lavin and Crook, 1990).[11] Ultimately, it was hoped that the policy would improve the socioeconomic standing of disadvantaged minorities and thereby narrow inequities separating them from whites. This study has addressed an important but largely neglected facet of success in the labor market, the quality of work experience.

Our findings indicate that educational attainment is a key determinant of access to jobs that involve complex work and job authority. Its effect does not

operate in a simple linear fashion, however. A bachelor's degree is the threshold that must be crossed to enhance chances for intrinsically demanding positions, while earning a graduate degree dramatically increases opportunity for such work. That an associate degree appears to do little more than a high school diploma to augment work complexity and authority implies that the critical view of community colleges as providing limited access to more rewarding jobs may be an accurate assessment.

A sizeable proportion of black (35 percent) and Hispanic (35 percent) students did earn B.A.'s and higher-level credentials. Most of these degrees were awarded to students who would not have been admitted to CUNY were it not for the open-admissions policy. Indeed, the program approximately tripled the number of bachelor's and postgraduate degrees received by blacks, and about doubled the number of each going to Hispanics (Lavin and Crook, 1990). In effect, then, many took good advantage of the opportunity to improve their educational achievements and consequently were well positioned to compete for desirable jobs.

Nonetheless, mainly because of the lingering influences of past economic and educational disadvantages, most minority students did not attain the level of education typically needed to gain access to high quality jobs. The majority either left college without any degree or earned an associate degree. In contrast, most whites earned bachelor's and graduate degrees (62 percent). These differences in educational attainment in large measure explain disparities between whites and minorities in obtaining jobs with challenging work and authority.

But even if the educational attainments of minorities had equalled those of whites, our analyses suggest that ethnic disparities would remain. The sources of these differences are to be found in the private-sector labor market, where whites are more likely to obtain jobs involving complex work and managerial

responsibility than comparably qualified blacks and Hispanics. And though such disparities are not apparent in the public sector, private-sector inequalities have a greater impact since most jobs are located there. Whatever the labor market dynamics may be, discrimination seems partly involved. Certainly our data on respondents' perceptions of unfair treatment support this view.

Although the open-admissions program had no explicit gender focus, because of well-documented sex disparities in earnings and other employment rewards, we considered whether there were differences between men and women in access to complex work and authority. What was disclosed is a pattern of gender-linked college majors and subsequent occupational attainments that limit women's chances for the best rewarded positions. Undoubtedly because education, health, and the social services are where high-level occupations traditionally have been available to women, many females earned degrees in these fields and obtained employment as teachers, social workers, nurses, therapists, and so forth. As we have seen, work in these areas is often challenging but entails little if any administrative power. Males, on the other hand, are far more apt to major in business, engineering, and mathematics, which allowed then to claim a disproportionate share of upper-level private-sector positions in management and the professions.

These differences point to the continuing significance of gender-typed definitions of appropriate career aspirations. The product of various societal and institutional influences, such as curricular placement and academic counseling that steer females away from math and science courses as well as peer group pressure not to pursue a "sex deviant" course of study, these processes perpetuate sex-segregated occupational attainments. And though females have made gains in male dominated occupations, normative beliefs about women's place in the work world still effectively constrain their career options. Adding to this is the sectoral distribution of occupations such that the upper-level jobs held by

women are concentrated in the less rewarded public sector.

These findings testify to both the contributions of a policy such as open admissions and the limitations imposed by the larger institutional fabric. The policy enabled many to earn higher educational credentials, and thus reap some of the workplace benefits of education. But on the other hand, open admissions was not able to erase the effects of past disadvantage on educational attainment, and labor market conditions created new disadvantages for minorities.

ACKNOWLEDGMENTS

This research was done under grants to the second author from the Spencer Foundation and the Ford Foundation.

ENDNOTES

1. We have chosen not to use union membership as a determinant of work complexity since there is no obvious reason for expecting unionized workers to substantially differ from nonmembers on this dimension of work. For instance, it is not uncommon for health and educational professionals to be unionized.

2. On the basis of research indicating that socioeconomic origins have a modest direct effect on occupational destinations (e.g., Blau and Duncan, 1967; Featherman and Hauser, 1978; Jencks et al., 1979), we had thought that socioeconomic background variables might help explain how jobs with complex work and/or authority are attained. When we included parental education and income in our preliminary analyses, however, they did not exert significant influence. Since our sample consists of college goers, this finding is not so surprising, for recent research has shown that college graduates' occupational outcomes are independent of their social origins (Hout, 1988).

3. 3,525 is the number of cases with information on educational attainment, ascriptive status (race/ethnicity and gender) and work complexity. There are somewhat fewer cases with information on job authority (3,233).

4. Supervising others' work and having authority to hire and fire are obvious indicators of job authority, not being closely supervised is more ambiguous. Its importance is suggested by the way work is structured in complex organizations. Spaeth's (1979) research on the dimensions of work in upper-echelon occupations shows an increase in autonomy as one ascends the authority hierarchy. In other words, those with more authority tend not to be closely supervised.

5. Only respondents who answered all three questions are included in the authority scale.

6. Assessments of the construct validity of the job authority and the work complexity variables suggest that both are valid indicators of their respective concepts. For example, those with high authority tend to have high salaries and hold managerial or administrative job titles. Similarly, those with high work complexity typically earn high salaries and (as we noted in the text) are overrepresented in professional and upper-echelon managerial jobs.

7. Some college is distinguished from a high school diploma so that we can compare the effects of an associate degree with a high school diploma knowing that the latter does not include individuals who may have completed comparable or even more college credits than A.A. holders.

8. All differences referred to in the discussion of the two tabular analyses (Tables 1 and 6) are statistically significant, as determined by difference-in-proportions tests for all key pairs of interest (see Blalock, 1979).

9. Because there are missing data in excess of five percent for job sector we created a dummy variable consisting of those who did not respond to the relevant questionnaire item. This procedure retains cases that would otherwise be deleted, yet derives the value of the coefficients from the data-present cases only (Cohen and Cohen, 1983). We use the same procedure (for job sector and union) in Table 7 and Table 8 (for union only since the analysis compares public and private sector workers). Coefficients for missing-data dummy variables are not presented.

10. Because of missing data on employment sector, the combined n of cases of these regressions is less than the aggregate regression reported in Table 2. The same is true in the parallel analyses of authority (Tables 7 and 8).

11. As the research on open admissions has shown, over the first three years of the program the number of minority freshmen admitted to the university averaged more than 8,000 annually, almost five times the number that entered in 1969, the last year before the new policy began. Most of these students--74 percent of blacks and 49 percent of Hispanics in senior colleges, and 79 percent of blacks and 64 percent of Hispanics in the community colleges--owed their entry to the policy. That is, they would not have been admitted were the 1969 admissions standards in place (Lavin and Crook, 1990).

REFERENCES

Adler, Paul
1986 "Technology and us." Socialist Review 16:67-96.

Alba, Richard D. and David E. Lavin
1981 "Community colleges and tracking in higher education." Sociology of Education 54:223-247.

Angle, John and David A. Wissmann
1981 "Gender, college major, and earnings." Sociology of Education 54:25-33.

Aronowitz, Stanley
1973 False Promises: The Shaping of American Working Class Consciousness. New York: McGraw-Hill.

Bell, Daniel
1973 The Coming of Post-Industrial Society: A Venture in Social Forecasting. New York: Basic Books.

Berk, Richard
1983 "An introduction to sample selection bias in sociological data." American Sociological Review 48:386-398.

Blalock, Hurbert M.
1979 Social Statistics: Rev. 2nd ed. New York: McGraw-Hill.

Blau, Peter M. and Otis D. Duncan
1967 The American Occupational Structure. New York: Wiley.

Bowen, Howard R.
1977 Investment In Learning: The Individual and Social Value of Higher Education. San Francisco: Jossey-Bass.

Cain, Pamela S. and Donald J. Treiman
1981 "The 'Dictionary of Occupational Titles' as a source of occupational data." American Sociological Review 46:253-278.

Carnoy, Martin and Henry M. Levin
1985 Schooling and Work in the Democratic State. Stanford CA: Stanford University Press.

Cohen, Jacob and Patricia Cohen
1983 Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences. Hillsdale, NJ: Lawrence Erlbaum Associates.

Collins, Randall
1979 The Credential Society: An Historical Sociology of Education and Stratification. New York: Academic Press.

Collins, Sharon
1983 "The making of the black middle class." Social Problems 30:369-381.

Daymont, Thomas N. and Paul L. Andrisani
1984 "Job preferences, college major, and the gender gap in earnings." Journal of Human Resources 19:408-428.

DiPrete, Thomas A.
1987 "The professionalization of administration and equal employment opportunity in the U.S. federal government." American Journal of Sociology 93:119-140.

DiPrete, Thomas A. and Whitman T Soule
1986 "The organization of career lines: Equal employment opportunity and status advancement in a federal bureaucracy." American Sociological Review 51:295-309.

Dougherty, Kevin
1987 "The effects of community colleges: Aid or hindrance to socioeconomic attainment?" Sociology of Education 60: 86-103.

England, Paula and Lori McCreary
1987 "Gender inequality in paid employment." In Beth B. Hess and Myra Marx Ferree (eds.), Analyzing Gender: A Handbook of Social Science Research: 286-320. Newbury Park: Sage.

Farley, Reynolds
1984 Blacks and Whites: Narrowing the Gap? Cambridge MA: Harvard University Press.

Featherman, David L. and Robert M. Hauser
1978 Opportunity And Change. New York: Academic Press.

Feldman, Kenneth A. and Theodore M. Newcomb
1973 The Impact Of College On Students. San Francisco: Jossey-Bass.

Freeman, Richard B. and James L. Medoff
1984 What Do Unions Do? New York: Basic Books.

Griffin, Larry J.
1978 "On estimating the economic value of schooling and experience." Sociological Methods and Research 6:309-335.

Grimm, James W. and Robert N. Stern
1974 "Sex roles and internal labor market structures: The 'female' semi-professions." Social Problems 21:690-705.

Hall, Richard H.
1983 "Theoretical trends in the sociology of occupations." Sociological Quarterly 24:5-23.

Heise, David R.
1972 "Employing nominal variables, induced variables, and block variables in path analyses." Sociological Methods and Research 1:147-173.

Hirschhorn, Larry
1984 Beyond Mechanization: Work and Technology in a Postindustrial Age. Cambridge MA: The MIT Press.

Hout, Michael
1984 "Occupational mobility of black men: 1962 to 1973." American Sociological Review 49:308-322.

1988 "More universalism, less structural mobility: The American Occupational structure in the 1980s." American Journal of Sociology 93:1358-1400.

Hunter, Alfred A.
1988 "Formal education and initial employment: Unravelling the relationship between schooling and skills over time." American Sociological Review 53:753-765.

Jacobs, Jerry A.
1989 Revolving Doors: Sex Segregation and Women's Careers. Stanford, CA: Stanford University Press.

Jacoby, Sanford M.
1985 Employing Bureaucracy: Managers, Unions, and the Transformation of Work in American Industry, 1900-1945. New York: Columbia University Press.

Jencks, Christopher, Susan Bartlett, Mary Corcoran, James Crouse, David Eaglesfield, Gregory Jackson, Kent McClelland, Peter Mueser, Michael Olneck, Joseph Schwartz, Sherry Ward, and Jill Williams
1979 Who Gets Ahead? Determinants of Economic Success in America. New York: Basic Books.

Jencks, Christopher, Lauri Perman, and Lee Rainwater
1988 "What is a good job? A new measure of labor market success." American Journal of Sociology 93:1322-1357.

Karabel, Jerome
1972 "Community colleges and social stratification." Harvard Educational Review 42:521-562.

Kasarda, John D.
1983 "Entry-level jobs, mobility, and urban minority unemployment." Urban Affairs Quarterly 19:21-40.

Kaufman, Robert L. and Thomas N. Daymont
1981 "Racial discrimination and the social organization of industries." Social Science Research 10:225-255.

Kaufman, Robert L.
1986 "The impact of industrial and occupational structure on black-white employment allocation." American Sociological Review 51:310-323.

Kohn, Melvin L. and Carmi Schooler
1983 Work And Personality: An Inquiry into the Impact of Social Stratification. Norwood, NJ: Ablex Publishing.

Kluegel, James R.
1978 "The causes and cost of racial exclusion from job authority." American Sociological Review 43:285-301.

Lavin, David E., Richard D. Alba, and Richard A. Silberstein
1979 "Open admissions and equal access: A study of ethnic groups in the City University of New York." Harvard Educational Review 49:53-92.

1981 Right Versus Privilege: The Open Admissions Experiment at The City University of New York. New York: Free Press.

Lavin, David E., James Murtha, and David Hyllegard
1989 "Open-access higher education and work: A fourteen year followup of open-admissions students and their labor market experiences." Paper presented at the annual meeting of the American Educational Research Association, San Francisco.

Lavin, David E. and David B. Crook
1990 "Open admissions and its outcomes: Ethnic differences in long-term educational attainment." American Journal of Education 98:389-425.

Lichter, Daniel T.
1988 "Racial differences in underemployment in American cities." American Journal of Sociology 93:771-792.

Marini, Margaret Mooney and Mary Brinton
1984 "Sex typing in occupational socialization." In Barbara F. Reskin (ed.), Sex Segregation in the Workplace: Trends, Explanations, and Remedies: 192-232. Washington, DC: National Academy Press.

Mickelson, Roslyn A.
1989 "Why does Jane read and write so well? The anomaly of women's achievement." Sociology of Education 62:47-63

Miller, Ann R., Donald J. Treiman, Pamela S. Cain and Patricia A. Roos
1980 Work, Jobs, and Occupations: A Critical Review of the 'Dictionary of Occupational Titles'. Washington, DC: National Academy Press.

Mincer, Jacob
1974 Schooling, Experience, and Earnings. New York: Columbia University Press.

1989 "Human capital and the labor market: A review of current research." Educational Researcher 18:27-34.

Monk-Turner, Elizabeth
1990 "The occupational achievements of community and four-year college entrants." American Sociological Review 55:719-725.

Pincus, Fred L.
1980 "The false promise of community colleges: Class conflict and vocational education." Harvard Educational Review 50:332-361.

1986 "Vocational education: More false promises." In L. Steven Zwerling (ed.), The Community College and Its Critics: 41-52. San Francisco: Jossey-Bass.

Piore, Michael J.
1974 "Upward mobility, job monotony, and labor market structure." In James O'Toole (ed.), Work and the Quality of Life: Resource Papers for "Work In America." Cambridge: The MIT Press.

Rosenfeld, Rachel A.
1980 "Race and sex differences in career dynamics." American Sociological Review 45:583-609.

Sewell, William H. and Robert M. Hauser
1975 Education, Occupation, and Earnings: Achievement in the Early Career. New York: Academic Press.

Sokoloff, Natalie J.
1980 Between Money and Love: The Dialectics of Women's Home and Market Work. New York: Praeger.

Spaeth, Joe L.
1979 "Vertical differentiation among occupations." American Sociological Review 44:746-762.

1984 "Structural contexts and the stratification of work." In Donald J. Treiman and Robert V. Robinson (eds.), Research in Social Stratification and Mobility: 77-92. Greenwich, Connecticut: JAI Press.

Spenner, Kenneth I.
1983 "Deciphering prometheus: Temporal change in the skill level of work." American Sociological Review 48:824-837.

Spilerman, Seymour
1977 "Careers, labor market structures and socioeconomic achievement." American Journal of Sociology 83:551-593.

Strober, Myra
1984 "Toward a general theory of occupational sex segregation: The case of public school teaching." In B. Reskin (ed.) Sex Segregation in the Workplace. Washington, DC: National Academy Press.

Strumpel, Burkhard
1971 "Higher education and economic behavior." In Stephen B. Withey (ed.), A Degree and What Else?: 55-79. New York: McGraw-Hill.

U.S. Bureau of the Census
1983 1980 Census of Population: Detailed Population Characteristics: New York. Washington, DC: Government Printing Office.

1984 1980 Census of Population: Detailed Population Characteristics: U.S. Summary. Washington, DC: Government Printing Office.

1987 What's it Worth? Educational Background and Economic Status: Spring 1984. Washington DC: U.S. Government Printing Office.

BEST COPY AVAILABLE

U.S. Department of Labor
1977 Dictionary of Occupational Titles. 4th Edition. Machine-readable data file available from Inter-University Consortium for Political and Social Research, University of Michigan, Ann Arbor.

1988 The New York Transformation: Dimensions of the Knowledge Economy. New York: Bureau of Labor Statistics.

Useem, Michael and Jerome Karabel
1986 "Pathways to top corporate management." American Sociological Review 51:184-200.

Waldinger, Roger
1986-1987 "Changing ladders and musical chairs: Ethnicity and opportunity in post-industrial New York." Politics & Society 15:369-401.

Wilson, William J.
1980 The Declining Significance of Race: Blacks and Changing American Institutions. 2nd ed. Chicago: University of Chicago Press.

Wolf, Wendy C. and Neil D. Fligstein
1979a "Sexual stratification: Differences in power in the work setting." Social Forces 58:94-107.

1979b "Sex and authority in the work-place: The causes of sexual inequality." American Sociological Review 44:235-252.

Zuboff, Shoshana
1988 In the Age of the Smart Machine: The Future of Work and Power. New York: Basic Books.

TABLE 1

Percent High Work Complexity[a] by Educational Attainment, Gender and Ethnicity[b]

	Males			Females			Total
Educational Attainment:	White	Black	Hispanic	White	Black	Hispanic	
HS diploma[c]	14.0	1.9	10.2	23.5	2.2	5.1	11.3
	(78)	(30)	(16)	(38)	(33)	(17)	(212)
Some College[d]	20.8	14.0	12.5	18.7	1.8	2.5	15.5
	(181)	(56)	(42)	(118)	(53)	(35)	(485)
AA degree	26.1	16.1	5.6	10.3	5.6	5.7	14.4
	(170)	(51)	(28)	(160)	(110)	(63)	(582)
BA degree	34.5	34.4	32.6	25.8	26.4	44.8	32.0
	(577)	(61)	(58)	(434)	(117)	(39)	(1286)
MA degree	64.1	66.6	63.3	67.6	75.2	72.4	66.5
	(247)	(25)	(14)	(329)	(55)	(32)	(702)
ADV-PF degree[e]	87.2	---	---	75.3	---	---	84.1
	(178)			(62)			(258)
Mean	38.5%	20.5%	21.4%	35.7%	19.3%	20.9%	36.3
	(1431)	(224)	(160)	(1141)	(376)	(193)	(3525)

[a] Those in the top one-third of the work complexity distribution.
[b] Percentages are weighted; frequencies are unweighted.
[c] Attended college but earned less than 15 credits.
[d] Earned 15 or more credits but no degree.
[e] Because of small Ns, minorities with advanced or professional degrees are not reported.

TABLE 2

Determinants of Work Complexity

	(1)		(2)	
	Unstandardized	Standardized[a]	Unstandardized	Standardized
Ethnicity[b]		-.209***		-.084***
Black	-.550		-.240	
Hispanic	-.392		-.093	
Female			-.016	-.008
Education[c]				.584***
Some college			.197	
AA degree			.308	
BA degree			.730	
MA degree			1.484	
Adv-Prof degree			2.038	
Work exp. < degree			.005	.017
Work exp. > degree			.020	.076*
Public sector			-.165	-.073***
Constant	.124		.741	
Adj. R^2	.043		.308	
N unweighted	3,392			

* $p < .05$
** $p < .01$
*** $p < .001$

[a] The standardized coefficients for ethnicity and educational attainment are sheaf coefficients, described by Heise (1972).
[b] Whites form the reference category.
[c] The reference category contains those with high school diplomas.

TABLE 3

Means and Standard Deviations (below) for the Dependent and Independent Variables by Gender and Ethnicity

	Males			Females			Total		
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
Work Complexity	.112	-.426	-.292	.143	-.425	-.245	.124	-.425	-.268
	1.000	.989	.908	.909	1.066	.955	.965	1.033	.931
Job Authority	1.545	1.042	1.179	1.512	1.027	1.056	1.532	1.033	1.118
	1.052	.948	.984	1.011	.897	.902	1.036	.919	.944
Female	-	-	-	-	-	-	.396	.571	.508
							.489	.495	.501
HS Diploma	.102	.207	.135	.062	.148	.156	.086	.174	.146
	.302	.406	.343	.241	.356	.364	.280	.379	.353
Some College	.182	.308	.353	.156	.192	.241	.172	.242	.296
	.386	.463	.480	.363	.395	.429	.377	.429	.457
AA Degree	.113	.194	.114	.131	.259	.294	.120	.231	.206
	.316	.397	.319	.338	.439	.457	.325	.422	.405
BA Degree	.366	.209	.317	.350	.258	.175	.360	.237	.245
	.482	.408	.467	.477	.438	.381	.480	.426	.431
MA Degree	.139	.078	.072	.256	.117	.114	.185	.101	.093
	.346	.269	.259	.437	.323	.319	.388	.301	.291
ADV-PF Degree	.099	.003	.008	.045	.025	.021	.077	.015	.015
	.298	.052	.092	.207	.156	.143	.267	.123	.120

BEST COPY AVAILABLE

Table 3 (continued)
Means and Standard Deviations (below) for the Dependent and Independent Variables by Gender and Ethnicity

	Males			Females			Total		
	White	Black	Hispanic	White	Black	Hispanic	White	Black	Hispanic
Work Experience	1.735	1.955	2.337	2.043	2.603	2.079	1.857	2.325	2.206
Before Degree	3.134	3.553	3.830	3.365	4.110	3.500	3.230	3.890	3.662
Work Experience	8.333	9.392	8.933	7.749	8.264	8.900	8.102	8.748	8.916
After Degree	3.630	3.805	4.253	3.706	4.030	3.965	3.671	3.970	4.102
Public Sector	.265	.361	.326	.210	.341	.275	.243	.349	.300
	.441	.481	.471	.407	.475	.448	.429	.477	.459
Union	.321	.495	.426	.239	.517	.378	.289	.507	.402
	.467	.501	.496	.427	.501	.487	.453	.501	.491
N unweighted	1,386	210	153	1,108	349	186	2,494	559	339

TABLE 4

Determinants of Work Complexity for Public and Private Sector Workers

	Public sector model				Private sector model			
	(1)		(2)		(1)		(2)	
	Unstandardized	Standardized[a]	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Ethnicity[b]		-.150***		-.039		-.221***		-.125***
Black	-.407		-.112		-.586		-.354	
Hispanic	-.275		.004		-.380		-.147	
Female			.287	.127***			-.118	-.064**
Education[c]				.671***				.481***
Some college			.170				.195	
AA degree			.371				.242	
BA degree			.844				.601	
MA degree			1.834				1.038	
Adv-Prof degree			2.346				1.827	
Work exp. < degree			.013	.042			.003	.009
Work exp. > degree			.024	.084			.013	.050
Constant	.069		-1.247		.132		.494	
Adj. R^2	.020		.440		.048		.246	
N unweighted[d]	897				2,063			

* $p < .05$
** $p < .01$
*** $p < .001$

[a] The standardized coefficients for ethnicity and educational attainment are sheaf coefficients, described by Heise (1972).
[b] Whites form the reference category.
[c] The reference category contains those with high school diplomas.

TABLE 5

Degree Recipients' Major Field of Study by Gender and Ethnicity[a]

	Males	Females	Whites	Minorities[b]
Arts & Humanities	12.0%	13.4%	12.7%	12.5%
Business	21.9	10.8	17.2	15.6
Education	7.2	22.1	13.7	14.8
Health & Social Services[c]	9.2	21.7	13.3	21.0
Natural Sciences, Engineering, Math[d]	17.9	6.9	13.3	11.3
Social Sciences	17.2	11.3	15.4	10.9
High Professional[e]	7.1	2.0	5.8	.8
Secretarial Studies[f]	.1	4.0	1.3	4.2
No field reported	7.3	7.8	7.2	9.0
N unweighted	1,563	1,439	2,215	687

[a] Percentages are based on the field in which respondents' earned their highest degree (AA, BA, MA, advanced, or professional). All percentages are for full-time workers in 1984.
[b] Blacks and Hispanics have been combined to form this category.
[c] Health sciences, social work, law enforcement, and the like.
[d] Includes architecture.
[e] Medicine, law, and similar high-level professional degrees.
[f] Only refers to an associate level degree.

TABLE 6

Percent High Job Authority[a] by Educational Attainment, Gender and Ethnicity[b]

	Males			Females			Total
Educational Attainment:	White	Black	Hispanic	White	Black	Hispanic	
HS diploma[c]	38.9	20.9	24.9	38.7	4.8	38.7	31.7
	(69)	(27)	(15)	(33)	(31)	(16)	(191)
Some College[d]	42.5	25.3	29.8	56.2	37.7	19.4	41.6
	(164)	(49)	(40)	(108)	(46)	(31)	(438)
AA degree	44.8	39.4	26.2	41.9	30.3	24.0	38.8
	(153)	(46)	(25)	(144)	(95)	(55)	(518)
BA degree	50.2	34.1	45.7	50.9	34.6	36.1	48.3
	(545)	(58)	(50)	(398)	(109)	(34)	(1194)
MA degree	52.3	31.5	33.3	41.0	24.8	22.5	43.6
	(230)	(22)	(13)	(304)	(51)	(27)	(647)
ADV-PF degree[e]	64.7	---	---	60.6	---	---	62.6
	(167)			(59)			(245)
Mean	48.9%	29.4%	33.6%	47.8%	28.5%	28.7%	44.3
	(1328)	(204)	(145)	(1046)	(340)	(170)	(3233)

[a] Those with a job authority score of 2 or 3.

[b] Percentages are weighted; frequencies are unweighted.

[c] Attended college but earned less than 15 credits.

[d] Attended college and earned 15 or more credits but did not earn a degree.

[e] Because of small Ns, minorities with advanced or professional degrees are not reported.

TABLE 7

Determinants of Job Authority

	(1)		(2)	
	Unstandardized	Standardized[a]	Unstandardized	Standardized
Ethnicity[b]		-.189***		-.110***
Black	-.499		-.271	
Hispanic	-.414		-.272	
Female			-.072	-.035*
Education[c]				.158***
Some college			.153	
AA Degree			.180	
BA Degree			.347	
MA Degree			.355	
ADV-PF Degree			.708	
Work Exp.< Degree			.029	.097***
Work Exp.> Degree			.044	.160***
Public Sector			-.251	-.107***
Union			-.655	-.298***
Constant	1.532		1.122	
Adj. R^2	.035		.178	
N unweighted	3,114			

* p < .05
** p < .01
*** p < .001

[a] The standardized coefficients for ethnicity and educational attainment are sheaf coefficients, described by Heise (1972).
[b] Whites form the reference category.
[c] The reference category contains those with high school diplomas.

TABLE 8

Determinants of Job Authority for Public and Private Sector Workers

	Public sector model				Private sector model			
	(1)		(2)		(1)		(2)	
	Unstandardized	Standardized[a]	Unstandardized	Standardized	Unstandardized	Standardized	Unstandardized	Standardized
Ethnicity[b]		-.138***		-.085		-.197***		-.141***
Black	-.318		-.197		-.568		-.399	
Hispanic	-.201		.118		-.447		-.334	
Female			.013	.007			-.132	-.063*
Education[c]				.087				.228***
Some college			-.096				.236	
AA degree			-.040				.270	
BA degree			.061				.461	
MA degree			-.138				.555	
Adv-Prof degree			-.002				1.066	
Work exp. < degree			.004	.016			.039	.118***
Work exp. > degree			-.010	-.044			.072	.249***
Union			-.658	-.328***			-.703	-.245***
Constant	1.066		-1.602		1.726		.797	
Adj. R^2	.017		.130		.038		.124	
N unweighted[d]	828				1,881			

* $p < .05$
** $p < .01$
*** $p < .001$

[a] The standardized coefficients for ethnicity and educational attainment are sheaf coefficients, described by Heise (1972).
[b] Whites form the reference category.
[c] The reference category contains those with high school diplomas.